

ABSTRACT

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5 A family of emitter controlled thyristors employ plurality of control schemes
for turning the thyristor^{on} and off. In a first embodiment of the present invention a
family of thyristors are disclosed all of which comprise a pair of MOS transistors,
the first of which is connected in series with the thyristor and a second which
provides a negative feedback to the thyristor gate. A negative voltage applied to the
gate of the first MOS transistor causes the thyristor to turn on to conduct high
currents. A zero to positive voltage applied to the first MOS gate causes the
10 thyristor to turn off. The negative feedback insures that the thyristor only operates
at its breakover boundaries of the latching condition with the NPN transistor portion
of the thyristor operating in the active region. Under this condition, the anode
voltage V_A continues to increase without significant anode current increase. Emitter
turn-off (ETO) thyristor fabrication packages are also disclosed having packaged
15 semiconductor devices controlling the thyristor.